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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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04/02/2004

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EXAMINER

TRAN, TRANG U

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/817,109	Applicant(s) WITHERS ET AL.	
	Examiner Trang U. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-36 and 46-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-36 and 46-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 March 2009 has been entered.

Response to Arguments

2. Applicant's arguments filed 05 March 2009 have been fully considered but they are not persuasive.

In re pages 9-10, applicants argue that Cookson and Barton both fail to teach:

a. "producing a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames in a substantially invisible way, wherein the raising of the luminance of the first frame increases total luminance of the first frame and the lowering of the luminance of the second frame decreases the total luminance of the second frame" of claim 18,

b. "altering intensity of at least two frames of the plurality of frames to encode the digital video signal, wherein the intensity of the at least two frames are each altered by a different intensity amount so that each of the at least two frames has a different total intensity than the other frame" of claim 33,

c. “encoding a signal presence in the digital video signal by increasing luminance of a first frame of the plurality of frames and decreasing luminance of a second frame of the plurality of frames in substantially invisible way, the first frame and the second frame being consecutive frames of the plurality of frames, wherein the increasing of the luminance of the first frame increases total luminance of the first frame and the decreasing of the luminance of the second frame decreases the total luminance of the second frame” of claim 35, and

d. “produce a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames, wherein the raising of the luminance of the first frame increases total luminance of the first frame and the lowering of the luminance of the second frame decreases the total luminance of the second frame” of claim 46 because there is no alteration to total luminance of a group, field or frame in the applied references.

In response, as discussed in the previous Office Action, the examiner respectfully disagrees. As discussed in the Last Office Action, Cookson et al discloses in col. 5, lines 33-48 that "The output of the detector triggers a function generator 28 that generates a waveform that is the inverse of the VEIL encoding scheme, the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines, in this case the function generator output would cause the voltage controlled amplifier to decrease its gain to 0.9 (10% down from unity) for the first line and increase its gain to 1.1 (10% up from unity) for the second line, **for the remaining lines where VEIL encoding is not detected the**

gain is unity, if more complex encoding schemes are used as described above, then the function generator generates a complementary waveform". From the above passage, it is clear that the total luminance of the group, field or frame in Cookson does not remains constant as alleged. It will increase in the first frame and decrease in the second frame.

Additionally, Cookson et al shows two tables in pages 3-4. In these tables, if the luminance of the eight lines are **different (one is higher and other are lower)**, the total luminance of the group, field or frame in Cookson does not remains constant as alleged but will be different as claimed.

Claim Rejections - 35 USC § 112

3. Claims 46-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed "computer-readable medium" was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

Art Unit: 2622

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18-24, 26, 28-36 and 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cookson et al. (US Patent No. 7,167,209 B2) in view of Barton et al. (US Patent No. 6,215,526 B1).

In considering claim 18, Cookson et al discloses all the claimed subject matter, note 1) the claimed accessing a video signal, the video signal comprising a plurality of frames is met by the incoming video signal (Fig. 6, col. 5, lines 10-48), 2) the claimed producing a modulated video signal by raising luminance of a first field and lowering luminance of a second field of the plurality of frames in a substantially invisible way is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48), and 3) the claimed wherein the raising of the luminance of the first field increases total luminance of the first field and the lowering of the luminance of the second field decreases the total luminance of the second field is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48).

However, Cookson et al explicitly do not disclose the claimed a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames.

Barton et al teach that the methods described herein operate interchangeably on fields of an interlaced signal (such as NTSC video) or on frames of a progressive signal (such as the output of a normal computer monitor), thus the terms “**field**” and “**frame**” are used interchangeably (Fig. 2, col. 5, lines 1-25).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the frame as taught by Barton et al into Cookson et al's system in order to enable frames accurate encoding of a sequence of video fields or frames.

In considering claim 19, the claimed wherein producing a modulated video signal comprises: producing a modulated video signal by raising luminance of a first plurality of pixels of a first frame of the plurality of frames and lowering luminance of a second plurality of pixels of a second frame of the plurality of frames in a substantially invisible way is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al).

In considering claim 20, the claimed wherein the first plurality of pixels includes a same selection of pixels as the second plurality of pixels is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al).

In considering claim 21, the claimed wherein at least some of the first plurality of pixels are located in the first frame at a same location of at least some of the second plurality of pixels in the second frame is met by the voltage controlled amplifier which

raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al).

In considering claim 22, the claimed wherein the first plurality of pixels includes an entire portion of pixels of the first frame and the second plurality of pixels includes the entire portion of pixels of the second frame is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al).

In considering claim 23, the claimed wherein producing a modulated video signal comprises: producing a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames in a substantially invisible way, the first frame and the second frame being consecutive frames of the plurality of frames is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al) and the frames of Barton et al (Fig. 2, col. 5, lines 1-25).

In considering claim 24, the combination of Cookson et al and Barton et al disclose all the limitations of the instant invention as discussed in claim 18 above, except for providing the claimed wherein producing a modulated video signal comprises: producing a modulated video signal by raising luminance of a first frame by a first amplitude level of at least two amplitude levels and lowering luminance of a second frame of the plurality of frames by a second amplitude level of the at least two amplitude levels in a substantially invisible way.

Cookson et al also discloses in col. 3, lines 48-51 that "The value of 10% is chosen for example only; the actual value used will depend on different design considerations such as the ability of the detection circuitry to detect low3r values of luminance variation".

It would have been obvious to one ordinary skill in the art at the time of the invention to raise luminance of a first frame by a first amplitude level of at least two amplitude levels and lower luminance of a second frame of the plurality of frames by a second amplitude level of the at least two amplitude levels since it is a different design consideration.

In considering claim 26, the claimed wherein accessing a video signal comprises: receiving a digital video signal generated at a signal source is met by the digital video stream (col. 9, line 29 to col. 10, line 22 of Barton et al.).

In considering claim 28, the claimed wherein accessing a video signal further comprises: accessing encoding instructions for the video signal is met by the encoding of the incoming video signal (Fig. 6, col. 5, lines 10-48 of Cookson et al).

In considering claim 29, the claimed wherein producing a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames comprises: producing a modulated video signal by raising luminance of a first frame of the plurality of frames and lowering luminance of a second frame of the plurality of frames is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al) and the frames of Barton et al

Art Unit: 2622

(Fig. 2, col. 5, lines 1-25). However, the combination of Cookson et al and Barton et al explicitly do not disclose the claimed raising luminance of a first frame of the plurality of frames by increasing a first signal by 50-70 mV and lowering luminance of a second frame of the plurality of frames by increasing a second signal by 50-70 mV.

Cookson et al also discloses in col. 3, lines 48-51 that "The value of 10% is chosen for example only; the actual value used will depend on different design considerations such as the ability of the detection circuitry to detect low^{3r} values of luminance variation".

It would have been obvious to one ordinary skill in the art at the time of the invention to raise luminance of a first frame of the plurality of frames by increasing a first signal by 50-70 mV and lower luminance of a second frame of the plurality of frames by increasing a second signal by 50-70 mV since it is a different design consideration.

In considering claim 30, the claimed wherein the second frame is located prior to the first frame in the video signal is met by the frames of Barton et al (see col. 5, lines 1-25).

In considering claim 31, the claimed wherein the second frame is located after the first frame in the video signal is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48 of Cookson et al).

Claim 32 is rejected for the same reason as discussed in claim 26.

Claims 33-34 are rejected for the same reason as discussed in claims 18-19, respectively.

In considering claim 35, Cookson et al discloses all the claimed subject matter, note 1) the claimed accessing a digital video signal, the digital video signal comprising a plurality of frames is met by the incoming video signal (Fig. 6, col. 5, lines 10-48), 2) encoding a signal presence in the digital video signal by increasing luminance of a first frame of the plurality of frames and decreasing luminance of a second frame of the plurality of frames in a substantially invisible way, the first frame and the second frame being consecutive frames of the plurality of frames is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48), and 3) the claimed wherein the increasing of the luminance of the first field increases total luminance of the first field and the decreasing of the luminance of the second field decreases the total luminance of the second field is met by the voltage controlled amplifier which raised by 10% on the first of two field adjacent lines and lowered by 10% on the second of two field adjacent lines (Fig. 6, col. 5, lines 10-48).

However, Cookson et al explicitly do not disclose the claimed accessing a digital video signal and a modulated video signal by raising luminance of a first frame and lowering luminance of a second frame of the plurality of frames.

Barton et al teach that the methods described herein operate interchangeably on fields of an interlaced signal (such as NTSC video) or on frames of a progressive signal (such as the output of a normal computer monitor), thus the terms “**field**” and “**frame**” are used interchangeably (Fig. 2, col. 5, lines 1-25).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the frame as taught by Barton et al into Cookson et al's system in order to enable frames accurate encoding of a sequence of video fields or frames.

In considering claim 36, the claimed further comprising: encoding a signal absence in the digital video signal by decreasing luminance of a third frame of the plurality of frames and increasing luminance of a fourth frame of the plurality of frames in a substantially invisible way, the third frame and the fourth frame being consecutive frames of the plurality of frames is met by the video sequence of Barton et al because the video sequence has at least four frames (Fig. 2, col. 5, lines 1-25).

Claims 46-47 are rejected for the same reason as discussed in claims 18-19, respectively.

In considering claim 48, the claimed wherein the video signal is accessed on an encoder and the producing of the modulation signal is performed on the encoder is met by the VEIL encoding disclosed in col. 2, lines 53-65.

In considering claim 49, the claimed wherein the at least two frames are consecutive frames is met by the video formats disclosed in col. 3, lines 13-26.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cookson et al. (US Patent No. 7,167,209 B2) in view of Barton et al. (US Patent No. 6,215,526 B1) as applied to claim 18 above, and further in view of Schwab et al (US 2008/0030614 A1).

In considering claim 25, the claimed wherein accessing a video signal comprises: receiving an analog video signal generated at a signal source is met by the incoming video signal (Fig. 6, col. 5, lines 10-48 of Cookson et al). However, the combination of Cookson et al and Barton et al explicitly do not disclose the claimed digitizing the analog video signal.

Schwab et al teaches in page 8, paragraph #0059 that the digital video processing having means for digitizing the analog video signal. It would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the using of digitizing the analog video signal as taught by Schwab et al into the combination of Cookson et al and Barton et al's system in order to process the video signal in digital form and thus, increase the quality of the video signal.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cookson et al. (US Patent No. 7,167,209 B2) in view of Barton et al. (US Patent No. 6,215,526 B1) as applied to claim 18 above, and further in view of Barton et al (US 2007/0230921 A1).

In considering claim 27, the proposed combination of Cookson et al and Barton et al discloses all the claimed limitations except for providing the claimed wherein accessing a video signal further comprises: accessing a vertical sync signal; and determining a timing of the plurality of frames from the vertical sync signal, the timing usable for a determination of where in the video signal to begin modulation.

Barton et al teaches in page 6, paragraph #0068 a method for triggering selective capture is through information modulated into the VBI or placed into an MPEG private data channel having the capability of using accessing a vertical sync signal; and determining a timing of the plurality of frames from the vertical sync signal, the timing usable for a determination of where in the video signal to begin modulation. It would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the using of accessing a vertical sync signal; and determining a timing of the plurality of frames from the vertical sync signal, the timing usable for a determination of where in the video signal to begin modulation as taught by Barton et al into the combination of Cookson et al and Barton et al's system in order to accurately synchronizing the video signal.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 9:00 AM - 6:30 PM, Monday to Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 26, 2009

/Trang U. Tran/
Primary Examiner, Art Unit 2622